Complete Summary

GUIDELINE TITLE

ASGE guideline: modifications in endoscopic practice for the elderly.

BIBLIOGRAPHIC SOURCE(S)

Qureshi WA, Zuckerman MJ, Adler DG, Davila RE, Egan JV, Gan SI, Lichtenstein DR, Rajan E, Shen B, Fanelli RD, Van Guilder T, Baron TH, Standards of Practice Committee, American Society for Gastrointestinal Endoscopy. ASGE guideline: modifications in endoscopic practice for the elderly. Gastrointest Endosc 2006 Apr;63(4):566-9. [52 references] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- On May 5, 2006 the U.S. Food and Drug Administrations (FDA) notified healthcare professionals and consumers of reports of acute phosphate nephropathy, a type of acute renal failure, that is a rare, but serious adverse event associated with the use of oral sodium phosphates (OSP) for bowel cleansing. Documented cases of acute phosphate nephropathy include 21 patients who used an OSP solution (such as Fleet Phospho-soda or Fleet ACCU-PREP) and one patient who used OSP tablets (Visicol). Individuals at increased risk of acute phosphate nephropathy include: those of advanced age, those with kidney disease or decreased intravascular volume, and those using medicines that affect renal perfusion or function [diuretics, angiotensin converting enzyme (ACE) inhibitors, angiotensin receptor blockers (ARBs), and possibly nonsteroidal anti-inflammatory drugs (NSAIDs)]. Recommendations were offered for providers and patients when choosing and using a bowel cleanser. See the FDA Web site for more information.

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SCOPE

DISEASE/CONDITION(S)

Conditions requiring gastrointestinal endoscopy in geriatric patients, including:

- Cancer
- Gastrointestinal ischemia
- Biliary tract disease

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Gastroenterology
Geriatrics

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To provide guidance regarding endoscopic practice issues in the elderly

TARGET POPULATION

Geriatric patients requiring gastrointestinal endoscopy, including:

- Physiologic age $\geq$65 years (geriatric patients)
- Physiologic age $\geq$80 years (advanced age patients)

Note: Because physiologic age is a continuum, this article is not intended to apply to rigidly defined age ranges.

INTERVENTIONS AND PRACTICES CONSIDERED

1. Consideration of general health and comorbid conditions in screening procedures
2. Preprocedure preparation (lavage, consideration of interference with implanted cardiac devices)
3. Attention to doses used for sedation and analgesia (narcotic and nonnarcotic central nervous system depressants [CNS] and benzodiazepines)
4. Gastrointestinal endoscopy procedures
    - Capsule endoscopy
    - Colonoscopy
    - Endoscopic retrograde cholangiopancreatography (ERCP)
    - Endoscopic sphincterotomy
    - Esophagogastroduodenoscopy (EGD)
    - Percutaneous endoscopic gastrostomy (PEG)
5. Intensified monitoring, including ready availability of oxygen

MAJOR OUTCOMES CONSIDERED

- Age-related complication rates
- Effect of confounding clinical conditions (e.g., dementia, cardiac dysfunction, pulmonary dysfunction)
- Usefulness of elective screening

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A MEDLINE literature search was performed, and additional references were obtained from the bibliographies of the identified articles and from recommendations of expert consultants.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Guidelines for appropriate utilization of endoscopy are based on a critical review of the available data and expert consensus.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The summary of recommendations is followed by evidence grades (A-C) identifying the type of supporting evidence. Definitions of the evidence grades are presented at the end of the "Major Recommendations" field.

Indications and Contraindications

For patients in any age group, endoscopy should be performed only when the results will influence clinical management or outcome. The indications for gastrointestinal endoscopy among the elderly are largely the same as those for adults, with some variation in the relative frequency based upon the development

of age-related diseases such as cancer, gastrointestinal ischemia, and biliary tract disease. The same relative and absolute contraindications also pertain, without respect to age. Increased attention should be paid, however, to the risk engendered by age-related diseases, such as cardiac and pulmonary dysfunction. Significant risk may outweigh the acknowledged benefits of a procedure.

Several studies of indications and outcomes of patients aged ≥80 years have found elective and emergency endoscopic procedures (including esophagogastroduodenoscopy [EGD], endoscopic retrograde cholangiopancreatography [ERCP], and colonoscopy) to be safe and that advanced age is not a contraindication to endoscopy. For example, in a large multicenter trial on ERCP complications, age was not found to be a risk factor for complications after endoscopic sphincterotomy. In a retrospective analysis, endoscopic sphincterotomy for bile duct stones was found to be a safe and effective treatment in patients aged ≥70 years. In comparison to patients aged 70 to 89 years, those aged ≥90 years underwent more emergency procedures and more frequently required multiple procedures and stent placement. Several recent studies have shown colonoscopy to be safe in elderly patients. In these studies, indications for colonoscopy were both for symptoms and surveillance/screening. Unadjusted cecal intubation rates varied from 69% to 94% and were generally comparable to younger patients, though ileal intubation rates were lower. Poor colonic preparations appear to be more frequent in the elderly and occur in 16% to 21% of patients.

Ethical issues are raised by the use of diagnostic or therapeutic modalities in patients with a limited life expectancy, a situation more common in the elderly. The acuity of the situation and the likelihood of benefit influence the decision to proceed with an endoscopic procedure. For example, studies have shown that the 30-day mortality in elderly patients receiving percutaneous endoscopic gastrostomy (PEG) is approximately 19% to 22%, largely due to underlying medical illnesses. There is particular controversy concerning the usefulness of PEG in elderly patients with dementia.

Similarly, the use of elective screening procedures for colorectal neoplasia in the elderly should be restricted to situations where it will likely extend life expectancy. Physiologic age and prognosis must be considered in the elderly. Most national guidelines for colorectal cancer screening do not provide upper-age constraints, although the concept of when to stop screening or surveillance on the basis of age has been addressed in the literature. Factors to be taken into account include lead time between screening and potential benefit, comorbid medical illnesses, and life expectancy. Screening colonoscopy studies have generally excluded patients aged ≥80 years, so there are no data to address a mortality benefit in this age group. Some authorities recommend limiting screening for colorectal cancer to those patients aged <80 years and discontinuing surveillance at age 85 years. In view of the safety of colonoscopy in the age group ≥80 years and the high yield for advanced neoplasia, it has been proposed that it may be appropriate to continue screening in this age group as long as there are no life-limiting comorbidities.

Preprocedure Preparation

Preparation for endoscopy in the geriatric or aged populations differs little from that for younger adults. For EGD, the recommendations for cessation of ingestion

of solids and liquids are the same as for younger patients. Preparation for colonoscopy with either standard dose polyethylene glycol (PEG) lavage or sodium phosphate osmotic laxative preparations can be used. Similar tolerability and efficacy of the 2 regimens has been demonstrated in the elderly. However, sodium phosphate preparations are associated with hyperphosphatemia, hypernatremia, and hypokalemia, although there were no clinically significant adverse effects in clinical trials in healthy elderly patients. Caution should be exercised in those patients with renal or cardiac dysfunction, in whom fluid and electrolyte shifts can occur with the osmotic preparations.

Elderly patients are more likely to have underlying heart disease and implanted cardiac devices. Electrocautery used during endoscopic procedures has the potential for causing electromagnetic interference with these devices, possibly leading to pacemaker inhibition or false detection of ventricular arrhythmias. The concern arises when using standard monopolar snares, not biopsy forceps, sphincterotomy, and argon plasma coagulation. Recommendations for management of patients with pacemakers and implantable cardioverter defibrillators (ICDs) are not well defined. Preprocedure evaluation of device function in collaboration with cardiology personnel should be considered, especially in patients with ICDs. A forthcoming American Society for Gastrointestinal Endoscopy (ASGE) document will provide more specific guidelines for these patients. Intracardiac defibrillators should be inactivated before the use of electrocautery. This must always be done with the use of continuous rhythm monitoring until the defibrillator is reactivated after the procedure. Alternative means of tissue removal, destruction, or hemostasis, such as cold snare or biopsy, injection therapy, heater probe thermocoagulation, band ligation, and clipping should be considered whenever possible in patients with ICDs.

During capsule endoscopy there is a theoretical potential for interference from the digital radiofrequency communication between the capsule and the data recorder, so the presence of a cardiac pacemaker or ICD is considered a relative contraindication to capsule endoscopy. Recently, reports on small series of patients have been published showing capsule endoscopy to be safe in patients who were monitored and studied in a hospital setting. No significant interference with pacemaker or ICD function was seen, and there was no interference with the capsule endoscopy images. Because large studies are not available, it may be advisable that patients with implanted cardiac devices be evaluated by a cardiologist before capsule endoscopy and patients with ICDs be observed in a hospital setting with continuous cardiac monitoring.

Sedation and Analgesia

Most gastrointestinal endoscopy is performed using moderate sedation. Guidelines regarding conscious sedation and monitoring of adult patients have been previously published. Sedation in the elderly requires awareness of their increased response to sedatives. A variety of physiologic processes contribute to the increase in sensitivity and sedation risk in geriatric patients. Arterial oxygenation progressively deteriorates with age, with and without oxygen supplementation. Cardiorespiratory stimulation in response to hypoxia or hypercarbia is blunted and delayed. Narcotic and non-narcotic central nervous system (CNS) depressants produce greater respiratory depression and a greater incidence of transient apnea and episodic respirations. The risk for aspiration also rises as a result of a

significant increase in the sensory stimulus threshold required for reflexive glottic closure.

The age-related increase in lipid fraction of body mass yields an expansion of the distribution volume for pharmacologic agents, which are highly lipid soluble, including the benzodiazepines. In conjunction with reduced hepatic and renal clearance mechanisms, this can prolong recovery for elderly patients after sedation. Finally, a complex interplay among heightened CNS sensitivity and alterations in drug receptors, volumes of distribution, and intercompartmental transfer contributes to the reduced dosage requirements of all of the standard sedative agents. Nevertheless, age alone is not a major determinant of morbidity. Rather, age-related diseases and rapid or excessive dosing contribute more to the cardiopulmonary complications of sedation than does age itself.

Drugs used for sedation in geriatric patients should have a short half-life, with minimally active metabolites and limited side effects. Doses based solely on mg/kg body weight may produce profound respiratory depression and hypotension. The primary modification in sedation practices required in the geriatric population is administration of fewer agents at a slower rate and with a lower cumulative dose. As in younger adults, midazolam and/or narcotics are generally used. Fentanyl may have an advantage over meperidine in the elderly due its quicker onset of action and shorter half-life. Propofol has a narrower margin of safety in elderly patients but has been shown to be safe when used in elderly patients. Lower initial doses of sedative-hypnotics, usually half the normal recommended adult dose, along with slow and gradual titration to effect is a useful guide when sedating the geriatric patient.

One means of minimizing risk in the elderly patient is to perform endoscopy with minimal or no sedation. Although moderate sedation significantly improves tolerance for EGD, several studies have demonstrated the role of newer ultrathin endoscopes in allowing nonsedated upper endoscopy, including in elderly patients. Two studies have shown successful nonsedated PEG placement with the use of ultrathin endoscopes. Other advantages of smaller caliber upper endoscopes are the reduced likelihood of oxygen desaturation and arrhythmias during the procedure.

Monitoring/Procedural Care

As with all moderate sedation, standard monitoring procedures should be followed. Great care should be exercised in older patients with rheumatoid arthritis because neck extension during upper endoscopy or to improve ventilation may cause atlanto-axial subluxation with the potential to produce spinal cord injury.

There should be a low threshold for oxygen administration before and during moderate sedation because it reduces the incidence of oxygen desaturation. Oxygen supplementation should be used liberally in patients with known cardiovascular or pulmonary compromise, realizing that oxygen dosing has the potential risk of causing respiratory depression when patients with chronic hypercarbia lose the respiratory drive of hypoxemia.

Equipment

The monitoring devices, resuscitative equipment, and drugs used for geriatric patients are the same as those used for all patients. Oxygen should be readily available. Endoscopes and accessories are the same as those used in younger adults. Pediatric instruments, particularly colonoscopes with more flexible insertion tubes, may be useful in older patients who frequently have significant fixation or narrowing of the sigmoid colon as a result of prior surgery or diverticular disease.

Therapeutic Interventions

There are no age-specific differences in the technical aspects of endoscopic therapies for geriatric patients. As previously discussed, prudent judgment should be used regarding the relative risk and benefit for endoscopic therapies, which may have little bearing on prognosis or quality of life due to significant underlying comorbidities.

Summary

- Most diagnostic and therapeutic endoscopic interventions can be safely performed in elderly patients. (**B**)
- Preparation for endoscopy in the elderly differs little from that in younger adults, but caution regarding fluid and electrolyte shifts should be exercised when using colonoscopy preparations. (**B**)
- Colonoscopic screening and surveillance for colorectal cancer in patients of advanced age should be individualized on the basis of general health and comorbid medical illnesses. (**C**)
- Moderate sedation in the elderly requires heightened attention to dosing and the effects of standard sedatives. (**C**)
- Initial doses of sedatives should be lower than standard adult dosing and titration should be more gradual to allow assessment of the full dose effect at each dose level. (**C**)
- Intensified monitoring is appropriate for many elderly patients. (**C**)

Definitions:

A. Prospective controlled trials
B. Observational studies
C. Expert opinion

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and classified for the recommendations using the following scheme:

A. Prospective controlled trials

B. Observational studies
C. Expert opinion

When little or no data exist from well-designed prospective trials, emphasis is given to results from large series and reports from recognized experts. Guidelines for appropriate utilization of endoscopy are based on a critical review of the available data and expert consensus.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate use of endoscopy in the elderly

POTENTIAL HARMS

- Increased attention should be paid to the risk engendered by age-related diseases, such as cardiac and pulmonary dysfunction. Significant risk may outweigh the acknowledged benefits of a procedure.
- Sodium phosphate preparations are associated with hyperphosphatemia, hypernatremia, and hypokalemia, although there were no clinically significant adverse effects in clinical trials in healthy elderly patients. Caution should be exercised in those patients with renal or cardiac dysfunction, in whom fluid and electrolyte shifts can occur with the osmotic preparations.
- Cardiopulmonary complications of sedation.

CONTRAINDICATIONS

CONTRAINDICATIONS

- The relative and absolute contraindications for gastrointestinal endoscopy among the elderly are largely the same as those for adults.
- During capsule endoscopy there is a theoretical potential for interference from the digital radiofrequency communication between the capsule and the data recorder, so the presence of a cardiac pacemaker or implantable cardioverter defibrillator (ICD) is considered a relative contraindication to capsule endoscopy.

QUALIFYING STATEMENTS

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Further controlled clinical studies are needed to clarify aspects of this statement, and revision may be necessary as new data appear. Clinical consideration may justify a course of action at variance to these recommendations.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Qureshi WA, Zuckerman MJ, Adler DG, Davila RE, Egan JV, Gan SI, Lichtenstein DR, Rajan E, Shen B, Fanelli RD, Van Guilder T, Baron TH, Standards of Practice Committee, American Society for Gastrointestinal Endoscopy. ASGE guideline: modifications in endoscopic practice for the elderly. Gastrointest Endosc 2006 Apr;63(4):566-9. [52 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006 Apr

GUIDELINE DEVELOPER(S)

American Society for Gastrointestinal Endoscopy - Medical Specialty Society

SOURCE(S) OF FUNDING

American Society for Gastrointestinal Endoscopy

GUIDELINE COMMITTEE

Standards of Practice Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American Society for Gastrointestinal Endoscopy (ASGE) Web site.

Print copies: Available from the American Society for Gastrointestinal Endoscopy, 1520 Kensington Road, Suite 202, Oak Brook, IL 60523

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

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